A Rare Complication After Laparoscopic Appendectomy: Stump Appendicitis

Eurasian Clinical and Analytical Medicine Case Report

Stump Appendicitis After Laparoscopic Appendectomy

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Abstract
Stump appendicitis is defined as re-inflammation of residual appendix tissue after incomplete appendectomy. Clinically, it presents with acute abdominal pain. Early diagnosis is vital for avoiding potential complications. A history of appendectomy lowers clinical suspicion and increases morbidity. Stump appendicitis should be considered as the diagnosis in patients with appendectomy presenting with lower right quadrant pain and signs of peritonitis. In this paper, we report a 51-year-old patient who was admitted to emergency department with signs of acute abdomen and diagnosed with stump appendicitis at laparoscopic examination 1 month after undergoing laparoscopic appendectomy operation. In addition to patient history and physical examination, abdominal tomography plays an important role in the diagnosis of stump appendicitis.

Keywords
Acute Abdomen; Stump Appendicitis; Laparoscopic Appendectomy

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Introduction

Appendectomy is one of the most commonly performed surgical procedures worldwide. As a result of its huge worldwide volume, it is typically associated with quite variable and frequent complications. Stump appendicitis is a rare, albeit highly fatal and morbid, late complication of appendectomy [1]. Unless diagnosed early in the course, it may lead to a variety of complications such as gangrenized stump, perforation, intraabdominal abscess, and peritonitis. Therefore, stump appendicitis should definitely be considered in the differential diagnosis in patients presenting to emergency department with acute abdomen who also have a history of appendectomy operation [2]. In this paper, we report a rare case of stump appendicitis presenting with signs of acute abdomen 1 month after undergoing laparoscopic appendectomy operation.

Case Report

A 51-year-old woman presented to emergency department with abdominal pain starting from epigastric region and extending to lower right quadrant, loss of appetite, and nausea for 4 days. She had a history of a laparoscopic appendectomy operation performed at an outside center 1 month ago. On admission, her body temperature was 38.5°C. On physical examination, the examiner noted three scars corresponding to trocar entry points left from the previous laparoscopic appendectomy operation. She additionally had tenderness, guarding, and rebound tenderness in the lower right abdominal quadrant upon palpation. An anteroposterior chest X-Ray and an abdominal plain film were both normal. In laboratory examinations, she had a white blood cell count of 12700/mm³ and a CRP of 355 mg/L; other tests were normal. On abdominal ultrasonography, there was a hypoechoic lesion with a size of 52x32 mm but no internal vascularization on Doppler interrogation adjacent to caecum and ileum in the lower right quadrant, which was accompanied by edema in the adjacent mesenteric tissue. An abdominal computerized tomography revealed a fluid collection consistent with an abscess formation with a size of 48x28 mm that contained millimetric air values in the lower right quadrant, heterogeneity of mesenteric planes, and a tubular structure with a size of approximately 2 cm at the anterior aspect of the cecal floor (Figure 1). Based on these findings, a laparoscopic exploration was performed and an abscess pouch bordered by caecum, small intestine, and omentum was detected. Adhesions were separated, and an edematous appendix stump of approximately 2 cm was accessed; a stump appendicitis was diagnosed intraoperatively and resected (Figure 2). The abdominal cavity was then irrigated and a drain was placed at the surgical site. The drain was removed on day 6 and the patient was discharged with full recovery on day 7. She had an uncomplicated recovery period until a control visit 1 week later.

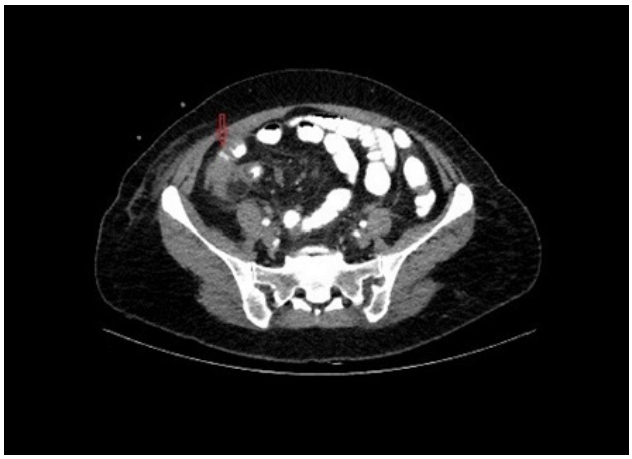

Figure 1. An axial section demonstrates heterogeneity of mesentery and a tubular structure with a size of approximately 2 cm that contains oral contrast material within at the anterior aspect of cecal floor in the lower right quadrant.

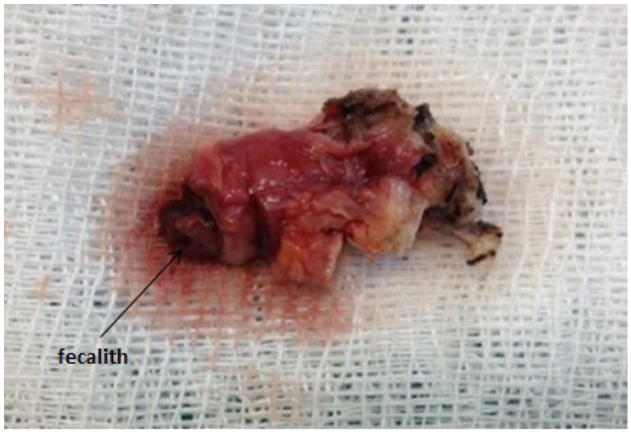

Figure 2. The view of the stump appendix resected intraoperatively.

Discussion

Stump appendicitis was first described by Rose in 1945. It is a condition with potential life-threatening complications [1]. Early diagnosis is crucial for avoidance of potential morbidity and mortality. Stump appendicitis, a rare complication of appendectomy (1/50000), may occur weeks or even years after appendectomy operation [3]. In our patient, it took approximately 1 month for stump appendicitis to emerge. The current increase in the incidence of stump appendicitis most likely results from making an improper appendiceal dissection and leaving an appendiceal stump longer than 5 mm. An unduly long stump functions as a reservoir for fecaliths that eventually obstruct appendiceal stump lumen, precipitating complications [4]. A stump longer than required may remain at the end of a procedure due to a subserous or retrocecal appendiceal location or surgical inexperience [1].

Emergency physicians and general surgeons should be aware of and vigilant for stump appendicitis, and this condition should be considered in the differential diagnosis of patients presenting with lower right quadrant pain. A delay in diagnosis prolongs duration of hospital stay. Pain initially emerges around umbilicus and then it migrates to lower right quadrant; and it is also accompanied by loss of appetite and nausea. A clinical picture typical of appendicitis is usually present [5]. Our patient also presented with a clinical picture typical of appendicitis.

Radiological examinations are central to the workup for stump appendicitis, with ultrasonography and tomography being the main, effective imaging tools in suspected cases. Ultrasonography, with its ability to define lesions, is the initial imaging tool of choice although it yields non-specific findings. On the other hand, computed tomography can provide clinicians with more valuable information. Thickening of intestinal wall in pericecal region, changes compatible with abscess formation, and fluid collection in paracolic region are particularly helpful for making a diagnosis of stump appendicitis [1]. Tomography showed a tubular structure compatible with both an abscess and an inflamed appendix in our patient.

It has been reported that 68% of appendicites operated for acute abdominal pain are perforated. Duration of hospital stay is longer in stump appendicitis compared with acute appendicitis since the former's diagnosis is delayed; the reported mean duration of hospital stay is 9 days [6]. Our patient had an abscess in pericecal region at the laparoscopic examination and she was discharged seven days after the operation.

There exists no standardized treatment approach for stump appendicitis. Either appendectomy is completed by laparoscopic or open technique or appendix stump is resected [4]. Some studies have even

reported that a conservative management without surgery can be implemented [7]. In our case, the abscess was drained and appendectomy was completed by laparoscopic technique.

In conclusion, stump appendicitis should definitely be considered in the differential diagnosis of patients presenting with lower right quadrant pain and signs of peritonitis who have a clinical presentation suggestive of acute appendicitis even when they have a previous appendectomy operation. Such a sceptic clinical attitude is vital for being able to make an early diagnosis.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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